

WHAT IS CLAIMED IS:

1. A fixing apparatus, used to hold a digital photography module on a case surface of a portable electronic device, the case surface being defined as a plane, a normal direction of the plane being defined as a first direction, the digital photography module having a camera lens and a first circuit board, and the first circuit board connected with the camera lens along the first direction, the fixing apparatus comprising:

a first component including a frame body, the frame body including a first opening, a plurality of folded sides extending from sides of the first opening and being bent with a predetermined angle; and

a second component including a plane body, the plane body including a second opening and at least one engagement portion, the engagement portion being in a predetermined thickness and configured around the second opening;

wherein the second component is coupled with the first component in the first direction, and the camera lens sequentially passes through the first opening and the second opening to protrude from the case surface, the folded sides prevent horizontal movement parallel to the plane of the first circuit board, and the engagement portion prevents vertical movement in the first direction of the first circuit board, thus immobilizing the digital photography module on the case surface of the portable electronic device by the fixing apparatus.

2. The fixing apparatus of claim 1, wherein the portable electronic device is a mobile telephone or a personal digital assistant (PDA).

3. The fixing apparatus of claim 1, wherein materials of the first component and the second component are metal to shield the portable electronic device from electromagnetic interference outside.

5 4. The fixing apparatus of claim 1, wherein materials of the first component and the second component are copper, aluminum, copper alloy, aluminum alloy, or combinations thereof to shield the portable electronic device from external electromagnetic interference.

10 5. The fixing apparatus of claim 1, wherein the portable electronic device further comprises a second circuit board, the second circuit board is coupled with another side of the first circuit board opposite the camera lens in the first direction, and a predetermined distance exists between the folded sides and the second circuit board to prevent the folded sides from damaging the second
15 circuit board.

6. The fixing apparatus of claim 1, wherein the predetermined distance is about 0.5 mm.

20 7. The fixing apparatus of claim 1, wherein a plastic case encloses the first circuit board, and the engagement portion directly contacts the plastic case to prevent vertical movement in the first direction of the first circuit board.

25 8. The fixing apparatus of claim 1, wherein the folded sides, the first opening and the frame body are integrally formed by stamping a metal sheet.

9. The fixing apparatus of claim 1, wherein the engagement portion, the second opening and the plane body are integrally formed by stamping a metal sheet.

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10. The fixing apparatus of claim 1, wherein the fixing apparatus further comprises a cushion placed between the engagement portion and the first circuit board, and the engagement portion compresses tightly to fix the first circuit board.

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11. The fixing apparatus of claim 10, wherein a material of the cushion is rubber.

12. The fixing apparatus of claim 1, wherein arrangement directions of the folded sides are divided into a second direction and a third direction parallel to the plane, and the second direction is perpendicular to the third direction, and the folded sides in the second direction and the third direction prevent horizontal movement parallel to the plane of the first circuit board.

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13. The fixing apparatus of claim 1, wherein the predetermined angle is about 90 degrees.

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14. The fixing apparatus of claim 1, wherein a shape of the second opening and a shape of the camera lens are identical.

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15. The fixing apparatus of claim 1, wherein a side of the first opening is large enough for the engagement portion to pass therethrough, thus compressing the engagement portion tightly to fix the first circuit board.